

BUREAU OF WATER

South Carolina Department of Health and Environmental Control

2005 SHELLFISH GROWING AREA STATUS REPORT

**Includes Classification Trends for Report
Years 1986 through 2005**

Shellfish Sanitation Program

Water Monitoring, Assessment and Protection Division
Environmental Quality Control - Bureau of Water
2600 Bull Street
Columbia, South Carolina 29201

January 2006

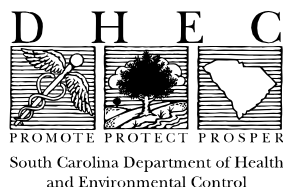


WEB ADDRESS:
<http://www.scdhec.net/water/html/shellfish.html#reports>

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Shellfish Sanitation Program**

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EXECUTIVE SUMMARY

The South Carolina Department of Health and Environmental Control is responsible for the classification of approximately 571,040 acres of estuarine and riverine habitat that has the potential to be utilized for the cultivation and harvest of molluscan bivalve shellfish. These classifications are implemented through S.C. Regulation 61-47, Shellfish, which was promulgated for the purpose of public health protection. Waters used for shellfish cultivation and harvest activities are maintained and protected under the standards established under Regulation 61-68, Water Classifications and Standards.

Review of data used to prepare the 2005 annual shellfish reports (data collected 2002-2004) indicates a decrease in *Approved* area classification acreage from that of the previous year's report. Concurrently, *Restricted* area classification acreages increased from the 2004 report.

A review of classification data for report years 1986 – 2005 indicates overall stability within all classification types over the entire period, although upward and downward oscillations within any particular classification type may be observed on a yearly basis. Oscillations between the *Approved* and *Restricted* classifications are typically due to water quality impacts from precipitation runoff and/or river flow.

INTRODUCTION

South Carolina has approximately 571,014 acres of estuarine and riverine growing area habitat suitable for the cultivation and harvest of molluscan shellfish. Shellfish growing areas are assigned water quality classifications for the primary purpose of public health protection. The South Carolina Department of Health and Environmental Control (DHEC) establishes these classifications based upon the quality of the overlying water within the growing areas. The purpose of this document is to provide an overview of the current classifications of these areas, as well as classification trends for the period 1986 to 2005. Additionally, a brief overview of the regulations used to establish these classifications is provided.

BACKGROUND

DHEC annually updates the acreage potentially available for molluscan bivalve shellfish harvesting and makes data available through growing Area sanitary survey reports. Prior to 1996, growing Area acreages were calculated utilizing a hand held planimeter and National Oceanic and Atmospheric Administration (NOAA) Mercator Projection Charts at 1:80,000 and 1:40,000 scales. Since Report Year 1996, acreages have been computer generated utilizing data digitized from 1:24,000 National Wetlands Inventory quadrangles. The computer generated acreage excludes approximately 60,000 acres of habitat that were included in the past estimates and which were determined to be physically unsuitable for

shellfish propagation. The current GIS methodology is vastly superior to the planimetry method and more accurately reflects actual habitat acreage. Classified acreage described in this document is based on data derived through implementation of the Shellfish Sanitation Program's ambient monitoring network. The growing Area water quality monitoring strategy adheres to guidelines established by the United States Food and Drug Administration's National Shellfish Sanitation Program (NSSP) and South Carolina Regulation 61-47. Classifications are developed from the Shellfish Sanitation Program water quality management areas databases. Statewide shellfish growing area totals during the period 1997-2000 fluctuated slightly due to several growing area boundary modifications, however, these data have been rectified. Additionally, small differences in acreage totals may result from year-to-year due to technical mapping issues (e.g. < 0.01% from 2001-2004).

CLASSIFICATION SYSTEM

Regulation 61-47, Shellfish - Growing Area Survey and Classification

Regulation 61-47, Shellfish, provides shellfish harvesting classifications which are used to protect public health by ensuring that shellfish are harvested from areas that have acceptable water quality, and that meet the requirements of the NSSP. South Carolina currently classifies 571,040 acres of growing area habitat within 25 Shellfish Management Areas. Acreage classified as *Approved*, *Conditionally Approved*, *Restricted*, or *Conditionally Restricted* is designated by the Department as having a potential for existing use for shellfish harvest.

Classification Designations

Approved Area - State waters that have been approved by the Department for harvesting shellfish for direct marketing or human consumption.

Conditionally Approved Area - waters that meet *Approved* area criteria under specified environmental conditions and time periods established by the Department. The conditions and time periods are based upon established standards specified in a management plan.

Restricted Area - waters that have been classified by the Department as *Restricted* and where harvesting for direct marketing is not allowed. Shellfish may be harvested from *Restricted* areas only by special permit.

Conditionally Restricted Area - waters that meet *Restricted* area criteria under specified environmental conditions and time periods established by the department. The conditions and time periods are based upon established standards for potential pollution sources specified in a management plan. This classification varies from the *Restricted* classification in that it is based on predictable events.

Prohibited Area - waters that have been classified by the Department as *Prohibited* for the harvesting of shellfish for any purpose related to human consumption. A *Prohibited* area is a closed area. Administrative closures are implemented adjacent to permitted wastewater discharges and marina facilities.

RESTORATION EFFORTS

DHEC and the South Carolina Department of Natural Resources (SCDNR) coordinate the development and implementation of procedures related to the management of coastal molluscan shellfish growing waters. Although each department has distinctly different duties and goals with respect to shellfish management, the development and implementation of procedures related to the management of coastal molluscan shellfish growing waters and resources are closely coordinated. One major component of this cooperative effort is the restoration of shellfish growing waters closed to harvesting for public health reasons. Each year, DHEC develops a listing for all coastal areas not having an *Approved* classification for the harvest of shellfish. The listing of non-administrative closure classifications is provided to SCDNR for prioritization for resource restoration purposes, and submitted to the United States Environmental Protection Agency in partial fulfillment of SCDHEC's reporting requirements under the Federal Clean Water Act (303d). DHEC also uses the listing and subsequent input from SCDNR for prioritizing shellfish area water quality restoration efforts. This effort satisfies the goals outlined in Regulation 61-68 regarding maintenance and improvement of classified waters and furthers the concept of shellfish harvest restoration as established by the Interstate Shellfish Sanitation Conference (ISSC) of which South Carolina is a member, represented by the Department.

TREND DATA

A review of Shellfish Program classification data for the 1986 through 2005 annual shellfish reports (data through 2004) indicates relative stability in terms of acreage within individual classification types. For the 2005 report year (based on data collected 2002 through 2004), a moderate decrease from 2004 *Approved* classification acreage is observed. Conversely, a substantially equivalent increase in *Restricted* classification acreage is observed. The 2005 net acreage reclassification from *Approved* to *Restricted* is approximately 11,474 acres. Of this total, approximately 1300 acres are in Georgetown County, 4612 acres are in Charleston County, and 5562 are in Beaufort County. In general, these impacts are due to influences from rainfall runoff and/or river flow.

For the 1986 – 2005 report review periods, *Approved* classification acreage ranges from a low of 64.1% in report year 2000 (includes documented *El Niño* wet weather period data 1997-1998), to a high of 70.2 % in report year 2003. The present 3-year review period *Approved* classification acreage represents 67.5% of total classified acreage.

Restricted classification acreage ranges from 15.4% in 2003 to 20.2% in 2000, with a present review period level of 18.7%.

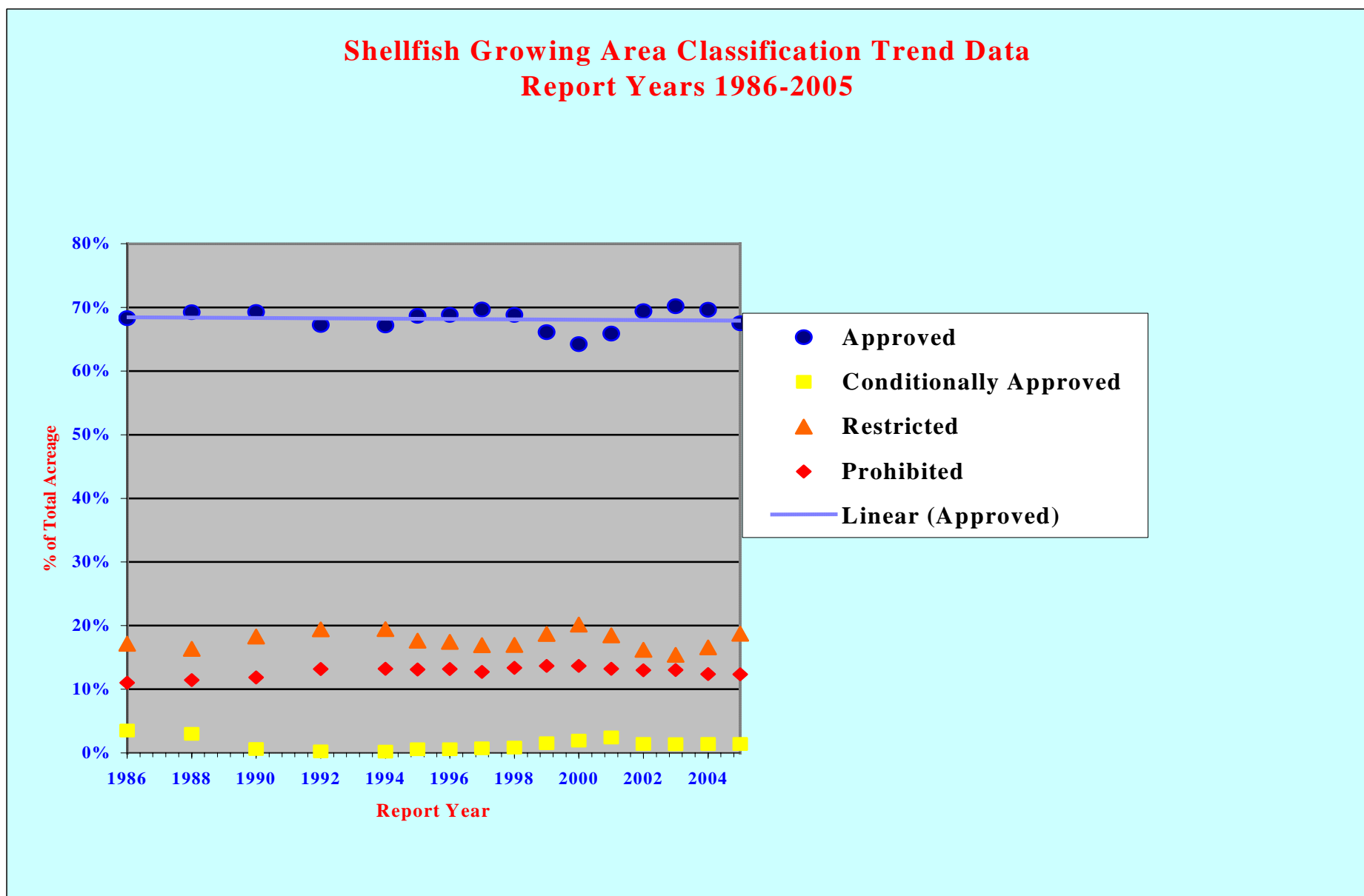
Conditionally Approved classification acreage ranges from a low of 0.2% in 1992 and 1994 to a high of 3.5% in 1986. The 2005 level of 1.4% is substantially equivalent to the 2004 level. Manpower and budget constraints often limit the amount of area that may be managed as *Conditionally Approved*.

Prohibited classification acreage ranges from a low of 11.0% during 1986 to a high of 13.7% in 1999. The 2005 level of 12.3% represents <1.0 % decrease in administratively closed acreage from the 2004 level.

CONCLUSIONS

The 2005 current report year levels of *Approved* acreage indicate a moderate decrease from that of 2004, while a similar moderate increase in *Restricted* acreage is observed. However, data review continues to indicate relative stability within all classification types throughout the 1986 - 2005 trend review period. Variations may occur on a yearly basis within any classification type. *Approved* and *Restricted* classifications are typically affected by rainfall runoff and river flow.

Figure 1



Shellfish Growing Area Acreage By Classification Type

	1986	1988	1990	1992	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
<i>Approved</i>	433817	437763	437982	424750	424228	392,242	393,039	397,708	393,064	377,486	366,795	376,309	396,090	400,706	397,589	385,542
<i>Conditionally Approved</i>	22363	18970	3704	1352	1107	3,192	3,192	4,096	4,811	8,712	11,089	13,827	7,964	7,860	8,001	8,064
<i>Restricted</i>	108896	103309	115635	122549	122849	100,759	99,608	96,476	96,853	106,772	115,218	105,435	92,522	87,971	94,678	106,975
<i>Prohibited</i>	70077	72231	74945	83205	83405	74,847	75,200	72,760	76,313	78,069	77,937	75,469	74,433	74,473	70,744	70,433
Total	635,153	632,273	632,266	631,856	631,589	571,040	571,039	571,040	571,041	571,039	571,039	571,040	571,009	571,010	571,012	571,014

Table 1

Shellfish Growing Area Acreage By Classification Type as Percent of Total

	1986	1988	1990	1992	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
<i>Approved</i>	68.3%	69.2%	69.3%	67.2%	67.2%	68.7%	68.8%	69.6%	68.8%	66.1%	64.2%	65.9%	69.4%	70.2%	69.6%	67.5%
<i>Conditionally Approved</i>	3.5%	3.0%	0.6%	0.2%	0.2%	0.6%	0.6%	0.7%	0.8%	1.5%	1.9%	2.4%	1.4%	1.4%	1.4%	1.4%
<i>Restricted</i>	17.1%	16.3%	18.3%	19.4%	19.5%	17.6%	17.4%	16.9%	17.0%	18.7%	20.2%	18.5%	16.2%	15.4%	16.6%	18.7%
<i>Prohibited</i>	11.0%	11.4%	11.9%	13.2%	13.2%	13.1%	13.2%	12.7%	13.4%	13.7%	13.6%	13.2%	13.0%	13.0%	12.4%	12.3%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 2